

PCT

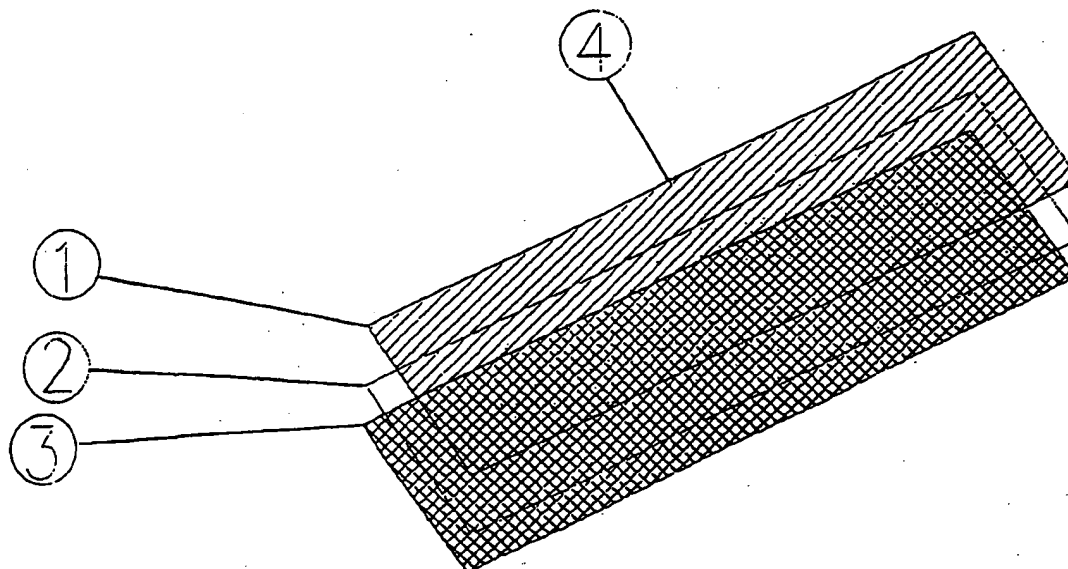
WORLD INTELLECTUAL PROPERTY ORGANIZATION  
International Bureau



INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification <sup>6</sup> : A47G 23/03, B32B 33/00</p>	<p>A1</p>	<p>(11) International Publication Number: WO 00/15085 (43) International Publication Date: 23 March 2000 (23.03.00)</p>
<p>(21) International Application Number: PCT/AU99/00751 (22) International Filing Date: 10 September 1999 (10.09.99) (30) Priority Data: 84182/98 11 September 1998 (11.09.98) AU (71) Applicant (for all designated States except US): JAYFIELD PTY. LTD. [AU/AU]; 2nd floor, 181 Fitzroy Street, St. Kilda, VIC 3182 (AU). (72) Inventor; and (75) Inventor/Applicant (for US only): CARKEEK, Stephen, Robert [AU/AU]; 13 Hall Street, Hawthorn, VIC 3123 (AU). (74) Agent: EARLEY, Martin, G.; Patent Attorney Services, 26 Ellingworth Parade, Box Hill, VIC 3128 (AU).</p>		<p>(81) Designated States: AE, AL, AM, AT, AT (Utility model), AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, CZ (Utility model), DE, DE (Utility model), DK, DK (Utility model), DM, EE, EE (Utility model), ES, FI, FI (Utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (Utility model), SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published With international search report.</p>

(54) Title: TABLE OR COUNTER MAT



(57) Abstract

A table or counter mat having a composite sheet structure comprising a non-slip backing layer (3); a top liquid absorbent textile surface (1) for resting cups, mugs or glasses; and an intermediate stabilisation layer (2) joining the backing layer (3) to the textile surface (1) wherein the resultant mat is absorbent and readily able to be laundered. The invention also provides a method of forming the table or counter mat by curing and bonding of the nitrile rubber backing layer (3) to the intermediate layer (2) and upper polyester textile layer (1) at greater than 100 °C and preferably greater than 170 °C and a sublimation printing (4) for printing on the textile layer (1) occurs at greater than 100 °C and preferably greater than 170 °C such that the mat is able to be laundered in hot water.

**FOR THE PURPOSES OF INFORMATION ONLY**

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakhstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

## TABLE OR COUNTER MAT

### Technical Field

This invention relates to a table or counter mat that lies flat and is readily laundered. The invention is particularly related to a device to protect and provide a functional non-slip  
5 absorbent and message communication covering for hospitality bar tops although the invention is not limited to such use.

### Background Art

The product used by the hospitality industry, including hotels, clubs and restaurants for absorbing spilt liquids on bar tops is generally in the form of strips of cotton towelling.

10 Problems experienced by hotel operators with the towelling product is that it slips on the work surface. It also wrinkles, bunches up in an unsightly appearance and it presents an unstable surface where glasses may topple over, spilling the contents. Towelling tends to lose colour and shrink in the washing process, further detracting from its appearance and presentation of the bar.

15 In addition, when the towelling product carries a printed brand message, there is a loss of colour, shrinkage and creasing which greatly detracts from the brand image and diminishes the investment value for the brand owner.

It is also known to have floor mats which may have a rubber backing and a top tufted pile of some 2 or more centimetres or alternatively a plurality of upwardly extending rubber  
20 fingers. However, such articles are used as floor mats with the upper layer having a physical mode of operation of brushing dirt or mud or the like from soles of shoes and allowing the residue dirt to fall within the spaces between the fingers or tufts of carpet. In essence such a structure is like a form of an upturned brush and is not liquid absorbent or providing a stable surface. Such an article is therefore not practical or useable as table or counter mats.

## DISCLOSURE OF INVENTION

It is an object of the invention to provide a table or counter mat that overcomes one or more of the disadvantages of the prior art.

In accordance with the invention there is provided a table or counter mat having a  
5 composite sheet structure comprising a non-slip backing layer; a top liquid absorbent textile surface for resting cups mugs or glasses; and an intermediate stabilisation layer joining the backing layer to the textile surface wherein the resultant mat is absorbent and readily able to be laundered. The non-slip backing layer can be formed from rubber such as a nitrile rubber of less than 2 mm thick with a density of about 1000 grams per square metre. The  
10 intermediate stabilisation layer can comprise a heat curable material non-woven polyester curable at temperatures greater than 100°C and preferably at about 170°C and wherein the mat is able to be laundered in hot water.

The textile surface of the table or counter mat can include a textile marking providing a print or advertising message viewable from above. This can be formed by a sublimation  
15 textile printing process as will be further detailed hereinafter. Preferably the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

The top liquid absorbent textile surface can be formed from a polyester surface with a pile height substantially in the range of 3 to 7 millimetres. Another embodiment has the top  
20 liquid absorbent textile surface formed from a tufted nylon cut pile surface with a pile height substantially in the range of 5 to 10 millimetres. However this textile surface receives its colour marking by an acid dye process.

The invention also provides a method of forming a table or counter mat including the steps of forming a nitrile rubber sheet material as a backing layer; forming an intermediate

layer of non-woven polyester fabric; forming a textile surface layer to form an upper layer; aligning all three layers and compressing the layed up materials by a heated platen for a selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the intermediate layer and upper textile layer; wherein the resultant table or  
5 counter mat lays flat and is able to stably support a glass or other similar liquid vessel with the table or counter mat liquid absorbent to absorb any spilled liquid.

The step of the curing and bonding of the nitrile rubber backing to the intermediate layer and upper textile layer occurs preferably at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

10 The step of providing a sublimation printing process can be by using a screen printed or digital image print paper which carries the required design and placing on the upper textile layer surface of the bar runner blank with print face down and activating a heat platen to press the screen print or digital image print paper to the textile surface under a selected heat, pressure and time duration. Preferably both the curing and bonding of the nitrile rubber  
15 backing to the intermediate layer and upper textile layer occurs at greater than 100°C and preferably greater than 170°C and the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

#### BRIEF DESCRIPTION OF THE DRAWINGS

In order that the invention is more readily understood, a particular embodiment thereof  
20 will now be described by way of example only with reference to the accompanying drawings wherein:

Figure 1 is a perspective view of a table or counter mat according to a first embodiment of the invention.

Figure 2 is a diagrammatic exploded constructional view of the table or counter mat of Figure 1.

### **BEST MODE FOR CARRYING OUT THE INVENTION**

Referring to Figure 1, it can be seen that the table or counter mat of the invention can be a non-slip, loose lay bar runner comprising a rectangular strip of nitrile rubber backing, heat cured and moulded to a tufted cut pile textile fabric dyed to a plain colour or a printed design.

Referring to Figure 2, it can be seen that the invention comprises three construction layers which are heat pressed and moulded together to form a homogeneous product for dimensional stability and to withstand a frequent laundry process.

The top layer 1 is a textile surface which in one embodiment is a tufted synthetic yarn cut pile surface with a pile height of 6 mm, and pile weight of 620 grams per square meter, cut to a size blank required, generally 250 x 900 mm, but not limited to this size.

The intermediate layer 2 is a spun bonded polyester non-woven primary fabric layer 110 grams per square meter, providing added stability and pile carrier.

The backing layer 3 is a nitrile rubber compound backing material 1 mm thickness, 1000 grams per square meter.

The textile surface 1 can be marked such as by sublimation printing so as to provide a message or logo viewable from the top surface 4 of the textile surface 1. Cut pile surface dyed to plain colours as required, or printed designs by heat transfer textile primary process.

### **Raw Material Contents**

Looking at the composition in more detail the backing layer comprises F2224 - nitrile rubber compound applied as the product back support with a 1 mm thickness of density 1000 grams per square metre. It is composed of mineral filler with carbon black reinforcing. Zinc

oxide and stearic acid activation together with ester plasticisation are used as understood in the field. Phenolic derived antidegradants are used. Also organic accelerators in combination with sulphur allow for conventional curing. Miscellaneous additives including resins and activators can be included.

- 5       The nitrile rubber backing provides a non slip surface. The thickness of the backing aids the stability while still allowing ready laundering.

The primary supporting intermediate layer comprises 100% Polyester thermally bonded non-woven fabric with a weight density of 110 gram per m<sup>2</sup> and tensile strength of 190 Newtons per 5 cm providing maximum elongation of +30% and tear strength of 140N.

- 10       Particular advantageous characteristics are dimensionally stable, high thermal stability, reduced flammability and ensures the product always lays flat

With the top textile surface there is a choice of:

- a)       Polyester fibre needlefelt, polyester scrim supported, high density heavy duty needled 500 grams per metre<sup>2</sup>, heat set, and laser cut to required size. This product is the preferred  
15       textile surface for brand message printing, offering print clarity and colour fastness to I.S.O., British and Australian standards.
- b)       Tufted polyester cut pile surface with a pile height of 5-6 mm, pile weight of 600-620 grams per metre<sup>2</sup>, knife cut to required size. This surface is suitable for brand message printing, colour fast to I.S.O., British and Australian standards.
- 20       c)       Tufted nylon cut pile surface, with a pile height of 5-6 mm, pile weight of 600 grams per metre<sup>2</sup>, which can be knife cut to required size. This surface is suitable for acid dye for solid plain colours, which are colour fast to I.S.O., British and Australian standards.

### Manufacturing Process

Selected textile surface is laser cut in the case of needlefelt material, or knife cut in case of tufted polyester or nylon surface material to the required blank shape and size, generally 250 x 900 mm, but not limited to this size. The blanks are stored on a holding table  
5 behind the rubber process line for the operator to lay up.

Uncured nitrile rubber is cut into required length strips from a continuous roll as received from the rubber supplier. The nitrile rubber strips are laid in parallel across the width of a Teflon™ continuous carrier belt on the rubber process line. The selected textile blank and the primary support layer are laid in position onto the uncured nitrile rubber to allow for  
10 a minimum of a 2 cm border of the rubber to be visible on either side of the textile blank. Product identification labels are positioned beneath the rubber on the Teflon™ belt to be cured to the back of each product.

The layed up batch of uncured nitrile rubber and textile blanks are advanced on the belt into the heat zone of the press over a heated platen. A press head is activated to  
15 compress the layed up materials to the heated platen for a selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the primary carrier and textile top. Settings applied to cure and bond a 1 mm thick nitrile rubber compound to the textile material are 170° for three minutes at 75 pounds per square inch. Following the selected time duration the press head raises, and releases the cured materials, for the belt  
20 drive to advance clear of the heated platen area, drawing in the following uncured layed up materials for the cure process to recur. This process is repeated continuously for each layed up batch of materials.

Once the materials are clear of the heat press they are cooled, taken from the carrier belt and stacked to be edge trimmed by a guillotine operator. Following the trim process the



bar runner product in its finished blank form is passed to a textile sublimation printer where the end finish requires a printed design on the product. In the case of a plain dyed colour finish, the product is passed to the dye house to be vat dyed.

#### Sublimation Print Process

5 A computer generated design is output with film colour separations, to be exposed on screens, which in turn are used to screen print sublimation dyes of the design onto transfer print papers for volume repeat prints. Short run and strike off print designs are output from the design computer to a digital image printer employing sublimation dyes for exact image transfer.

10 The finished nitrile rubber blank table or counter mat are placed on the bed of the sublimation print machine, a screen printed or digital image print paper which carries the required design, is placed on the textile surface of the table or counter mat blank, dye face down. A heat platen is activated pressing the print paper to the textile surface under a selected heat, pressure and time duration. This process sublimates the dye turning it into a  
15 gas which is transferred into the textile fibre, resulting in a mirror image of the screen-print design on to the textile surface of the table or counter mat.

On release from the press, the spent print paper is removed, leaving the finished design to be cooled and stored for packing and dispatch.

The above descriptions are of preferred embodiments of the invention and are  
20 provided as illustration and not limitation of the invention. Clearly persons skilled in the art would understand variations of the described invention without any inventive step and these are included within the scope of the invention as defined in the claims.

**CLAIMS**

1. A table or counter mat having a composite sheet structure comprising a non-slip backing layer; a top liquid absorbent textile surface for resting cups, mugs or glasses; and an intermediate stabilisation layer joining the backing layer to the textile surface wherein the resultant mat is absorbent and readily able to be laundered.
2. A table or counter mat according to claim 1 wherein the non-slip backing layer is formed from rubber.
3. A table or counter mat according to claim 2 wherein the non-slip backing layer is formed from a nitrile rubber.
4. A table or counter mat according to claim 3 wherein the nitrile rubber is in the range of less than 2 mm thick with a density of about 1000 grams per square metre.
5. A table or counter mat according to any one of claim 3 wherein the intermediate stabilisation layer comprises a heat curable material curable at temperatures greater than 100°C and preferably at about 170°C such that the mat is able to be laundered in hot water.
6. A table or counter mat according to claim 5 wherein the intermediate layer is formed from a non-woven polyester.
7. A table or counter mat according to claim 6 wherein the non-woven polyester has a density of about 450 to 650 grams per square metre.
8. A table or counter mat according to claim 5 wherein the textile surface includes a textile marking providing a colouring or a print or advertising message viewable from above.
9. A table or counter mat according to claim 8 wherein the textile marking is formed by a sublimation textile printing process.

10. A table or counter mat according to claim 9 wherein the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.
11. A table or counter mat according to claim 10 wherein the top liquid absorbent textile surface is formed from a polyester surface with a pile height substantially in the range of 3 to 7 millimetres..
12. A table or counter mat according to claim 8 wherein the top liquid absorbent textile surface is formed from a tufted nylon cut pile surface with a pile height substantially in the range of 5 to 10 millimetres..
- 10 13. A table or counter mat according to claim 12 wherein the textile surface has a density of about 600 grams per square metre.
14. A table or counter mat according to claim 13 wherein the textile marking is formed by an acid dye process.
15. A table or counter mat according to claim 14 wherein the dye process occurs such that  
15 the mat is able to be laundered in hot water.
16. A method of forming a table or counter mat including the steps of:
- a) forming a nitrile rubber sheet material as a backing layer;
  - b) forming an intermediate layer of non-woven polyester fabric;
  - c) forming a textile surface layer to form an upper layer;
  - 20 d) aligning all three layers and compressing the layed up materials by a heated platen for a selected time duration, pressure and temperature settings to cure and bond the nitrile rubber backing to the intermediate layer and upper textile layer;

wherein the resultant table or counter mat lays flat and is able to support stably a glass or other similar liquid vessel with the table or counter mat liquid absorbent to absorb any spilled liquid.

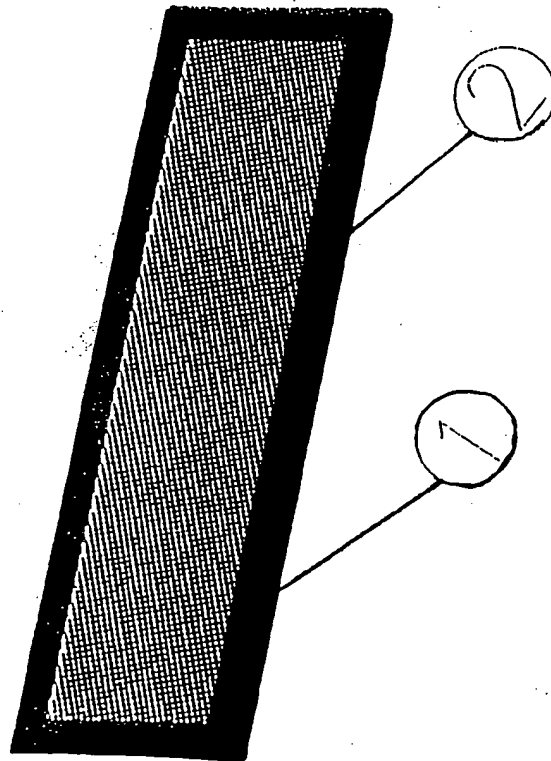
17. A method of forming a table or counter mat according to claim 16 wherein the curing  
5 and bonding of the nitrile rubber backing to the intermediate layer and upper textile layer occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

18. A method of forming a table or counter mat according to claim 16 including the step of  
10 providing a sublimation printing process by using a screen printed or digital image print paper which carries the required design and placing on the upper textile layer surface of the bar runner blank with print face down and activating a heat platen to press the screen print or digital image print paper to the textile surface under a selected heat, pressure and time duration.

19. A method of forming a table or counter mat according to claim 18 wherein the curing  
15 and bonding of the nitrile rubber backing to the intermediate layer and upper textile layer occurs at greater than 100°C and preferably greater than 170°C and the sublimation printing occurs at greater than 100°C and preferably greater than 170°C such that the mat is able to be laundered in hot water.

1/2

FIG. 1



2/2

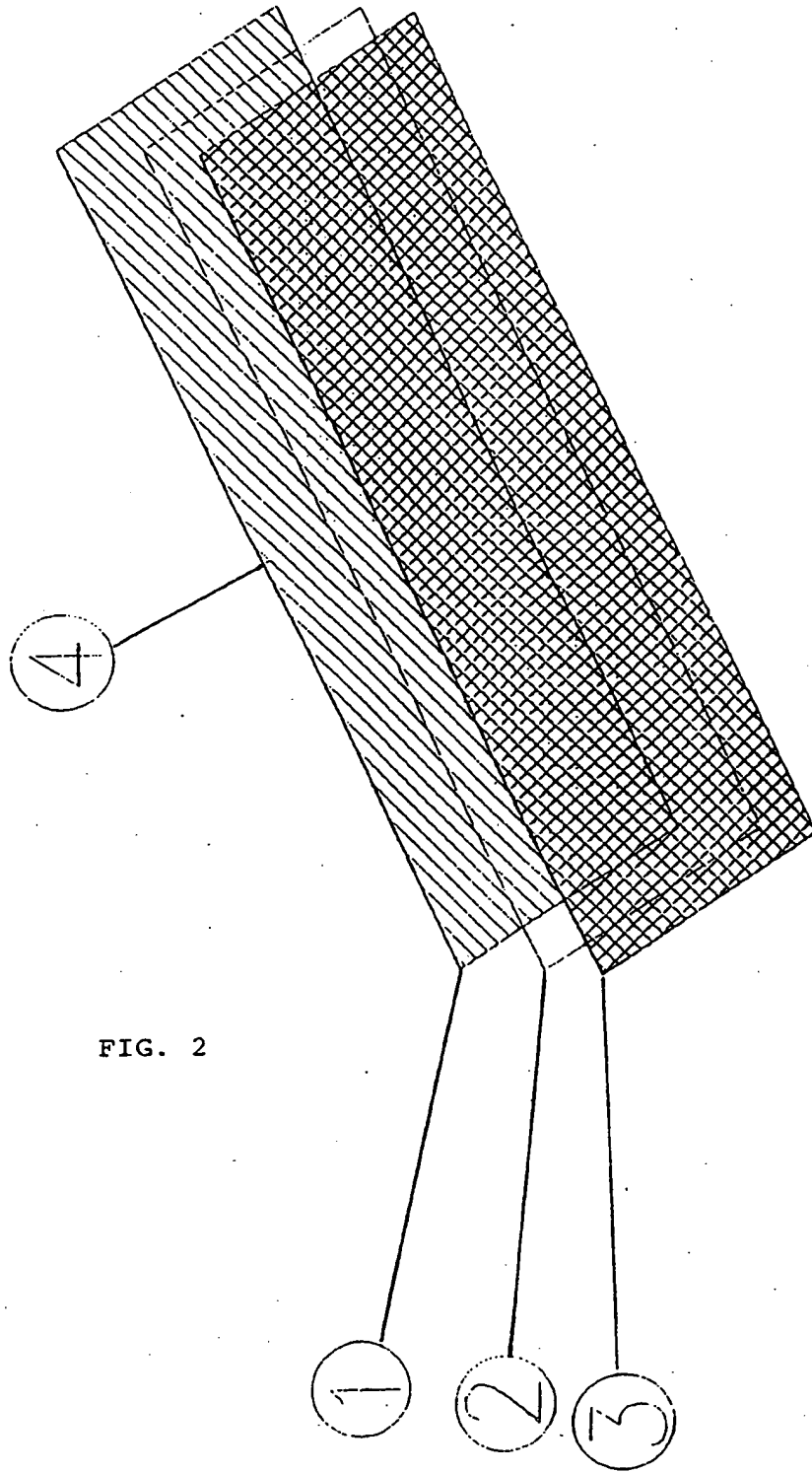


FIG. 2

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU 99/00751**A. CLASSIFICATION OF SUBJECT MATTER**Int Cl<sup>6</sup>: A47G 23/03, B32B 33/00

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**Minimum documentation searched (classification system followed by classification symbols)  
A47G 23/03, B32B 33/00Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
AU : IPC AS ABOVE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP, 10211078 A, (YAMAURA SHIKI INSATSU KK) 11 August 1998 (Patent Abstracts of Japan)	1
Y	JP, 10085114 A, (YUUKOU SHOJI KK) 7 April 1998 (Patent Abstracts of Japan)	1
Y	EP, 107197 A2, (BECTON, DICKINSON and Co) 2 May 1984	1

☒ Further documents are listed in the continuation of Box C☒ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search  
1 October 1999Date of mailing of the international search report  
12 OCT 1999Name and mailing address of the ISA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200  
WODEN ACT 2606  
AUSTRALIA  
Facsimile No.: (02) 6285 3929

Authorized officer

DAVID LEE  
Telephone No.: (02) 6283 2107

## INTERNATIONAL SEARCH REPORT

International application N .

PCT/AU 99/00751

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	GB 2229083 A, (John Quarmby & Son Ltd) 19 September 1990	1
A	GB 2054369 A, (ERNST SPIRIG) 18 February 1981	1
A	US 4433823 A, (PEARSON) 28 February 1984	1
A	CH 673010 A, (WERNLI) 31 January 1990	1
A	JP 09047347 A, (OKUDA MARK KK) 18 February 1997 (Patent Abstracts of Japan)	1
A	JP 57-46846 A, (TAKAO WADA) 17 March 1982	1



## INTERNATIONAL SEARCH REPORT

### Information on patent family members

International application No.  
**PCT/AU 99/00751**

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report		Patent Family Member				
JP	10211078					
JP	10085114					
EP	107197	CA 1221282	DE 3372796	DK 4847/83	ES 526699	JP59095135 A2
		US 4515851				
GB	2229083					
GB	2054369					
US	4433823	CA 1171678	DE 3170179	EP 56897	JP57125713A2	
CH	673010					
JP	09047347					
JP	57-46846					
END OF ANNEX						